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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,246	03/15/2004	Tri D. Tran	IL-10314C	2269
7590	10/20/2005		EXAMINER	
Alan H. Thompson L-703 P.O. Box 808 Livermore, CA 94551			WILKINS III, HARRY D	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/801,246

Applicant(s)

TRAN ET AL.

Examiner

Harry D. Wilkins, III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 4, 7 and 11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on page 1, please update the status of the referenced applications by inserting information such as "now U.S. Patent No. 6,346,187" or "now U.S. Patent No. 6,761,809".
2. In addition, page 35 of the specification does not contain the information of Table 1. Applicant is required to submit in an amendment the information of Table 1. Since this information appeared in the parent application(s), no new matter would be introduced by providing the contents of Table 1.

Appropriate correction is required.

Claim Objections

3. Claims 4, 7 and 11 are objected to because of the following informalities:
 - Claim 4: "is" should be inserted after "electrodes"
 - Claim 7: "method" should be "system"
 - Claim 11: "comprising" should be "comprises".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16 and 19 contain the trademark/trade name Teflon®. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35

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U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe polytetrafluoroethylene and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5-14, 17 and 20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Farmer (US 5,425,858).

Farmer anticipates the invention as claimed.

Farmer teaches (see abstract and figures 3, 4A, 4B, 5, 7 and 10) a capacitive deionization-regeneration system including a battery of at least 4 electrochemical cells (fig. 10), each cell comprising (fig. 3, 4A, 4B) at least one pair of adjacent electrodes including an electrosorptive carbon aerogel medium formed on one or more surfaces of the electrodes, each pair of adjacent electrodes including at least one aperture, each pair of adjacent electrodes forming an open channel to fluidly communicate with a subsequent open channel via the aperture to allow the fluid to flow across the aerogel in

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a serpentine path, an electrical circuit (fig. 5, 7, 10) for controlling operation of the cells adapted for switching the polarity of the cells and a fluid circuit for regulating the flow of a fluid through said cell under the control of said electrical circuit to maintain a continuous deionization and regeneration operation.

Regarding claims 8 and 9, the cell (fig. 3) of Farmer includes at least three pair of spaced apart and parallel electrodes for defining an open channel there between.

Regarding claim 2, the fluid circuit has (fig. 7, 10) included two outlets from each cell.

Regarding claims 3 and 10, the electrical circuit was adapted for regeneration by reversing the polarity of the cells.

Regarding claims 5, 6 and 13, Farmer teaches (abstract) using a carbon aerogel composite as the electrosorptive medium.

Regarding claims 7 and 14, the apparatus of Farmer was capable of operating at any voltage, including the claimed 1.2 to 1.7 V. The operating voltage is related to the manner of operation of the apparatus, and, thus, an apparatus capable of operating in the claimed fashion meets the claimed structural limitations. See MPEP 2114.

Regarding claims 11 and 12, the electrodes of Farmer included (fig. 4B, col. 10, lines 50-64) a titanium sheet structural support member, which would be considered to inherently possess a top conductive layer, a sheet of carbon aerogel secured to the top conductive layer, wherein the support member included at least one aperture for allowing fluid flow through the electrode.

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Regarding claims 17 and 20, Farmer teaches (fig. 3) adjacent electrodes including two surfaces adapted to contact an electrolyte.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farmer (US 5,425,858).

The teachings of Farmer are described above.

Farmer fails to teach attaching the carbon aerogel by strips.

However, it would have been obvious to have increased the amount of surface area of the carbon aerogel exposed to the electrolyte to have increased the absorption of ions. Therefore, it would have been obvious to one of ordinary skill in the art to have used strips to attach the aerogel to the electrode in order to expose the majority of the bottom surface of the aerogel to the electrolyte to increase absorption capacity.

9. Claims 15, 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farmer (US 5,425,858) in view of Yeh et al (US 4,683,648).

The teachings of Farmer are described above.

Farmer fails to teach an insulator spacing screen between adjacent electrodes.

Yeh et al teach a using a polyethylene spacer net (screen) between adjacent electrodes to prevent short circuiting of the electrodes.

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Therefore, it would have been obvious to one of ordinary skill in the art to have positioned a polyethylene spacer screen between the adjacent plates in order to prevent short circuiting of the cell.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Harry D. Wilkins, III
Examiner
Art Unit 1742

hdw